TACOM

Lethality, Survivability, Mobility and Sustainment for America's Army

Leadership
Teaming
Communication
Employee Support
Strategic Thinking
Organizational
Climate

# nk-automotive & Armaments COMma

# Tactical Wheeled Vehicle Conference

Future of Tactical Wheeled Vehicles in the U.S. Army

3 February 2004

**MG N. Ross Thompson III**
**Commanding General**

**Committed to Excellence - Supporting America's Warfighters**

# Are We Out of Balance?

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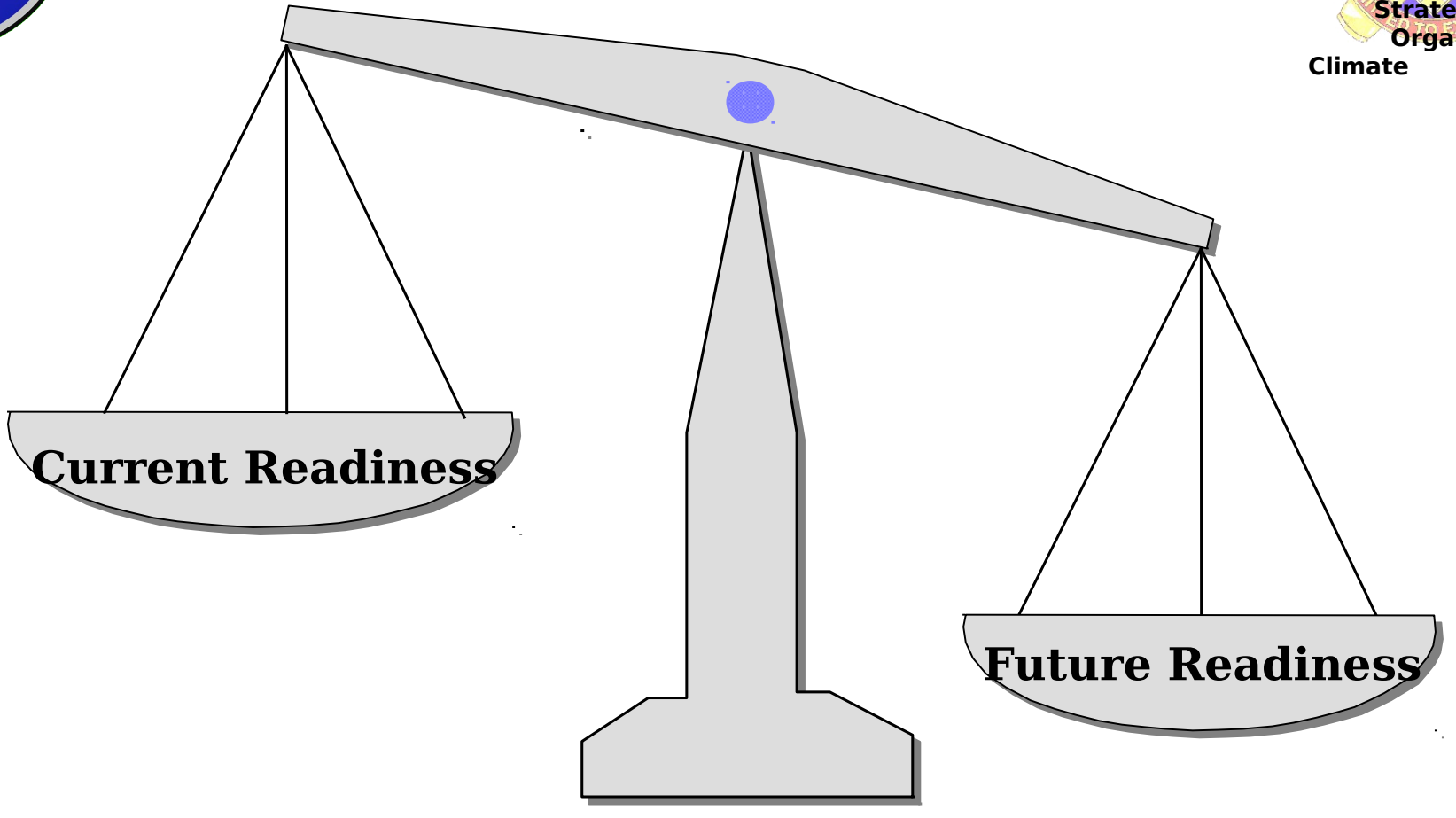


- SSTS funding shortfalls inhibit fleet efficiency upgrades
- Aging systems consume ever increasing amounts of OMA resources
- Pressing the current systems into new missions increases sustainment requirements

# Systems Transition

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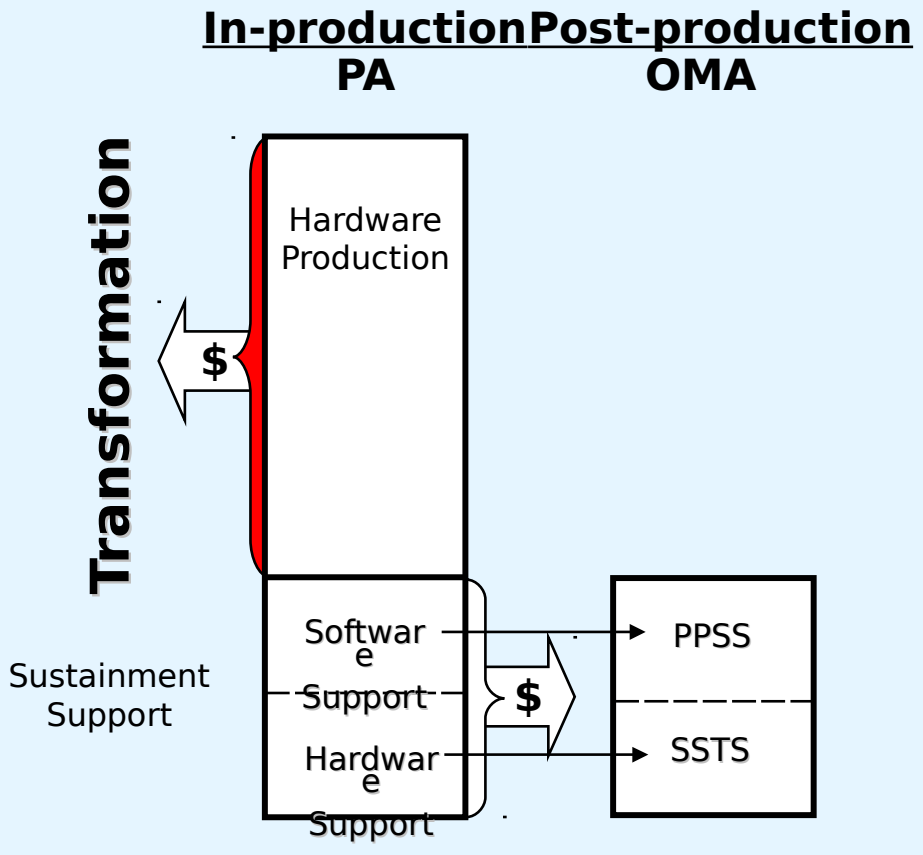
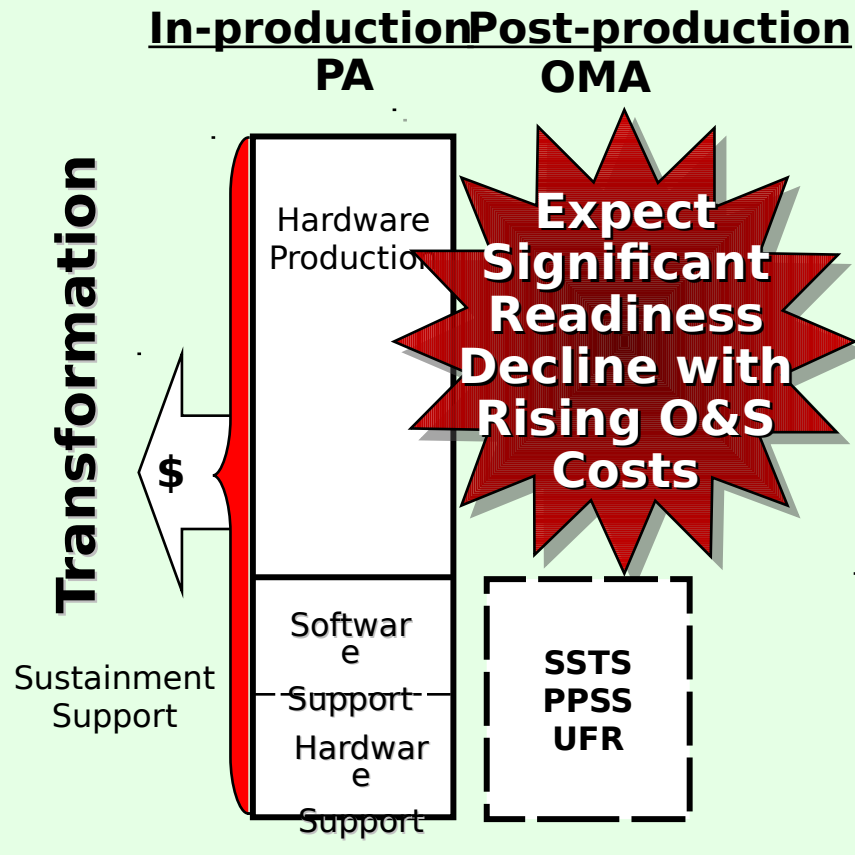
## What Should Happen




## What Did Happen



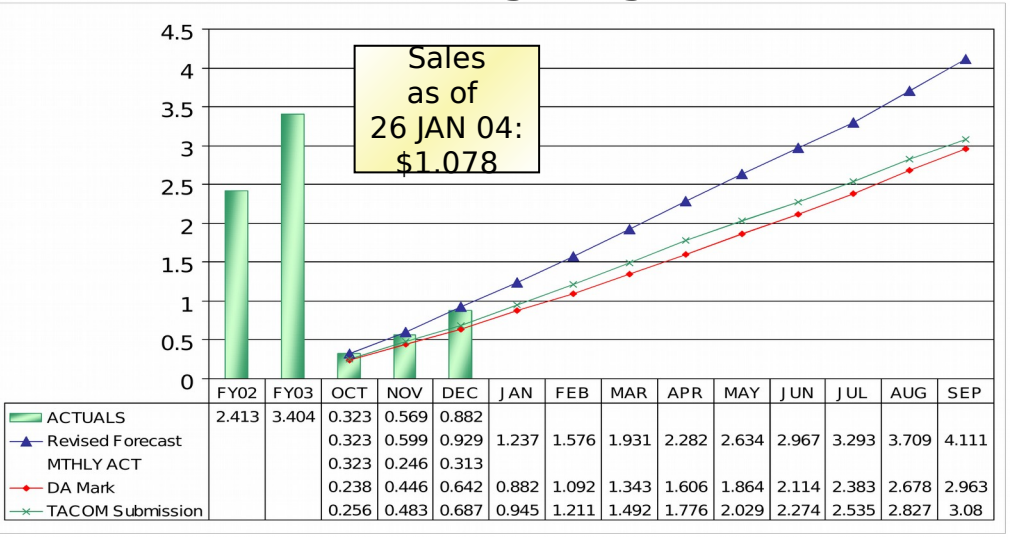

***System Transitions Accelerated to Support Transformation***

# AWCF (SMA)
# SPARE PARTS UPDATE
# FY04 Overview

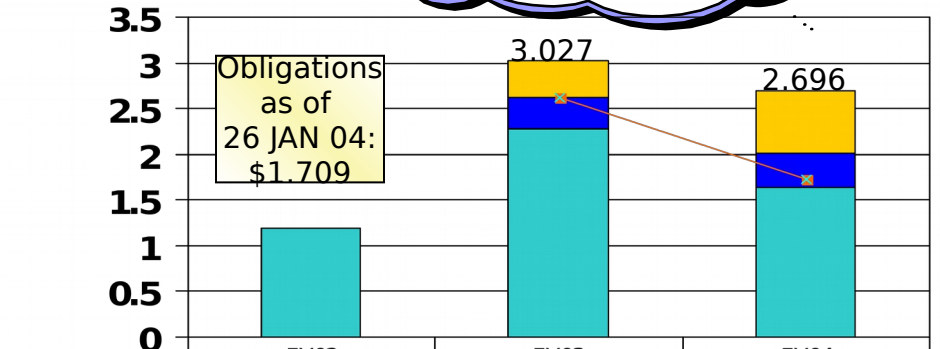
($'s in Billions)

FY04 Requirement is only 64% funded. UFR = $.973

## SALES




| | FY02 | FY03 | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACTUALS | 2.413 | 3.404 | 0.323 | 0.569 | 0.882 | | | | | | | | | |
| Revised Forecast | | | 0.323 | 0.599 | 0.929 | 1.237 | 1.576 | 1.931 | 2.282 | 2.634 | 2.967 | 3.293 | 3.709 | 4.111 |
| MTHLY ACT | | | 0.323 | 0.246 | 0.313 | | | | | | | | | |
| DA Mark | | | 0.238 | 0.446 | 0.642 | 0.882 | 1.092 | 1.343 | 1.606 | 1.864 | 2.114 | 2.383 | 2.678 | 2.963 |
| TACOM Submission | | | 0.256 | 0.483 | 0.687 | 0.945 | 1.211 | 1.492 | 1.776 | 2.029 | 2.274 | 2.535 | 2.827 | 3.08 |




| | FY02 | FY03 | FY04 |
|---|---|---|---|
| Reset | | 0.409 | 0.689 |
| Conops | | 0.343 | 0.371 |
| Sustainment | 1.198 | 2.275 | 1.636 |
| Available | | 2.615 * | 1.723 |
| UFR | | 0.412 | 0.973 |

* Includes OMA spares augmentation

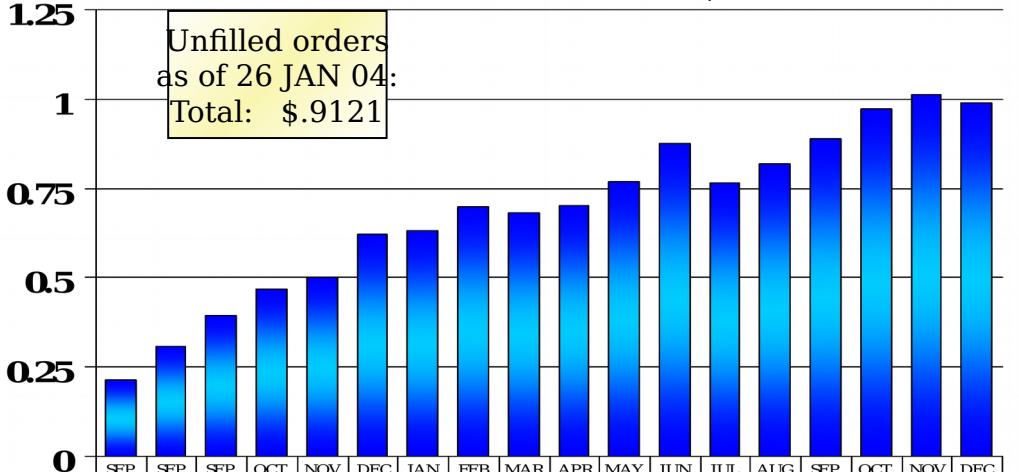
## Supply Availability/Operational Readiness (SA/OR)

| | Overall SA (Goal 85%) | OIF SA |
|---|---|---|
| **FY02** | 87.7% | |
| **FY03** | 80.0% | 86.1% |
| **FY04** | 71.9% | 74.0% |

**Key Systems OR Rates as of Dec 03:**

| | | | |
|---|---|---|---|
| M1A1 | 84% | BFVS | 84% |
| M1A2 | 90% | HMMWV | 91% |
| M198 HOW | 94% | | |
| HEMMTT | 84% | M109 | 88% |

## BACKORDER $




| | SEP 00 | SEP 01 | SEP 02 | OCT 02 | NOV 02 | DEC 02 | JAN 03 | FEB 03 | MAR 03 | APR 03 | MAY 03 | JUN 03 | JUL 03 | AUG 03 | SEP 03 | OCT 03 | NOV 03 | DEC 03 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL DOLLARS | 0.215 | 0.309 | 0.393 | 0.469 | 0.502 | 0.62 | 0.632 | 0.7 | 0.683 | 0.701 | 0.769 | 0.876 | 0.765 | 0.821 | 0.888 | 0.971 | 1.014 | 0.989 |

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# Product Lifecycle Management (PLM) Defined

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**Product Lifecycle Management (PLM)** is an integrated, information-driven approach to all aspects of a product's life, from its (*conceptual)* design through manufacture, deployment and maintenance—culminating in the product's removal from service and final disposal. PLM software suites enable accessing, updating, manipulating and reasoning about product information that is being produced in a fragmented and distributed environment. Another definition of PLM is the integration of business systems to manage a product's life cycle.

MichiganEngineering

**SOURCES: UNIVERSITY OF MICHIGAN PLM DEVELOPMENT CONSORTIUM, ARC ADVISORY GROUP**

**Stackpole, B. (2003, May 15, 2003). There's a New App in Town. *CIO*.**

# Product Lifecycle Management (PLM) Users of Product Data in DOD Acquisition

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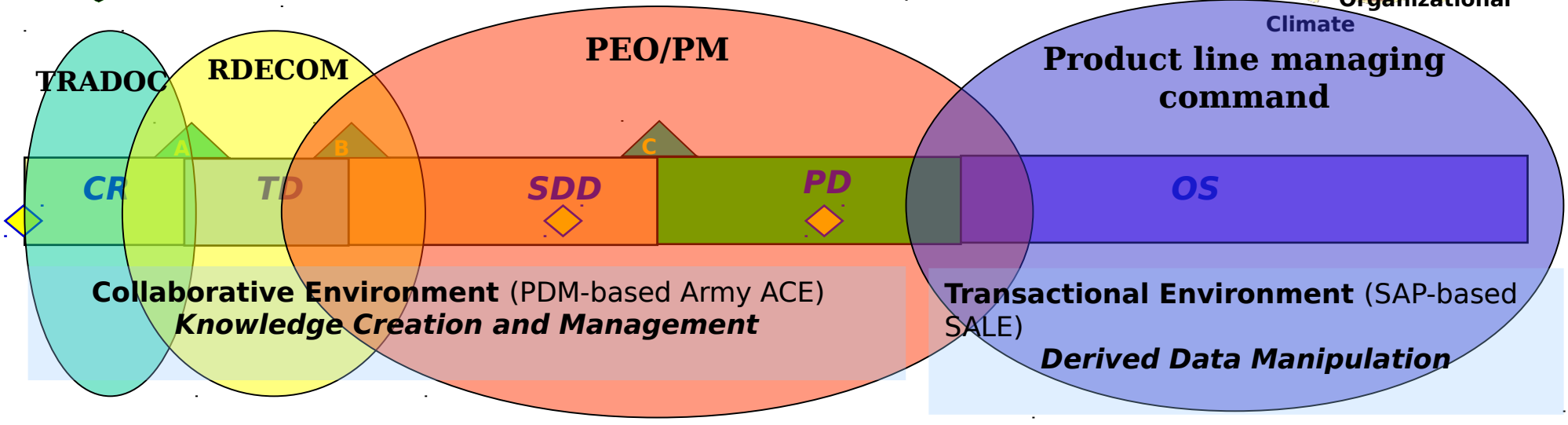


- These organizations generate, access or use weapon system product data to perform their mission. They require access to the same data on the same enterprise system!
  - **Stored Once (use many times):** any single piece of data should be stored only once. This would eliminate synchronization problems, multiple sets of operating costs, and enable common responses to queries regardless of geography, product or role.
  - **Controlled Access:** define ways to access data rather than have data.
  - **Portable Authority:** move the key, not the vault. Currently we move the data from vault to vault, contractor to government, and development to readiness. Every move introduces costs and content errors.

***Need an enterprise best of breed solution based on 3D solid models as the primary product data***

# The GM Math Pipeline

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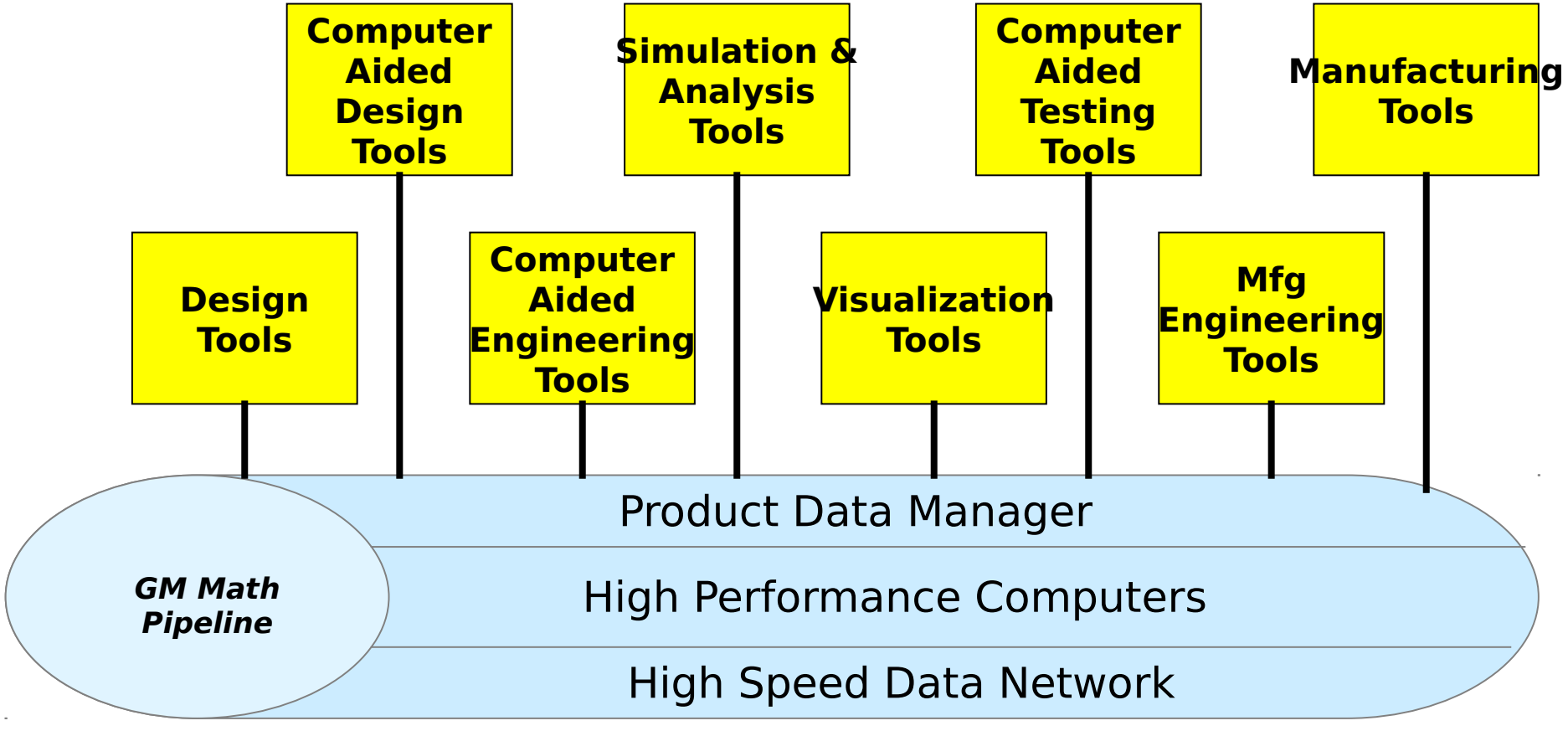

# Interactive Electronic Technical Manuals (IETMs)

- **Key enabler for Common Logistics Operating Environment (CLOE)**
  - Support single common test hardware and software
  - Support uniform interface with GCSS-A/Enterprise Resource Planning (ERP) System
- **Integrate Current system support with Future system requirements on the same battlefield**
- **Life-cycle data management**
  - Support data reuse, single source of data
  - Provide logistics info tailored to a specific model of vehicle
- **Funding of IETMs for the current force will:**
  - Leverage current diagnostic capabilities
  - Ensure DoD network interoperability
  - Incentivize PM investment for IETMs and embedded diagnostics

**Expert help to the maintainer means:**

- Increased readiness
- Greater vehicle availability
- More effective and safer fighting force

# Unique Identification (UID) Marking

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- **Policy outlined in 29 Jul 03 Under Secretary memo & DFARS Interim Rules**
- **Uniquely identified (UID) items will facilitate item tracking and provide reliable data for management purposes.**
- **We've implemented new DFARS UID clause in all supply solicitations per 1 Jan 04 mandate**
- **LMP (AMC), BSM (DLA), and other logistics systems are not aligned to support a standard UID at this time.**

***UID is key to Fixing DOD's Distribution Process***

# Enterprise Excellence in TACOM

- TACOM's manufacturing and service product lines undergoing Lean (and soon Lean / Six Sigma)
- Manufacturing: over 30 value streams "leaned" since FY03
  - Resulting in 30-40% increases in output and productivity
  - Approximately $15M in cost avoidance / savings projections (combined GSIE depots and arsenals)
- Service: Over 20 value steams "leaned" since April 03
  - Expect to see up to 50% increases in process flow time and reduced hours required to perform work
- Will apply enterprise excellence tools to all manufacturing and service lines by end of FY05
- Standing up Enterprise Excellence Federation by Feb 04.

# Total Lifecycle Support Requires Technical Data

- Acquisition Strategy should consider Total Life Cycle Support Requirements
- Sustainment of Weapon Systems is a Major Life Cycle Cost Driver
- Consider both Organic and Contractor Support for Sustainment Support
- Recognize the Need for RECAP, REBUILD, RESET Requirements and Obsolescence Issues
- Optimize for Least Cost to Total Army / DoD Support System

- DoD 5000.2
  - Data Management guidance is open ended
- Acquire Access or Rights for Technical Data when you have the Most Leverage
- AMC has Sustainment Responsibility (including Tech Data Management) for Army Ground Systems

• Technical Data has lifecycle requirements that are best addressed early

• 80% Solution needs to be thought out while in the initial program phase

# The U.S. Army
## Tank-automotive and Armaments Command

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# Back Up

# Five Points for a Great Maintenance Program

- ✓ **Assigned operators / assistant operators / supervisors.**
- ✓ **Initial and recurring certification of STAMIS operators and supervisors.**
- ✓ **Quality PMCS.**
- ✓ **Quality services and repair processes.**
- ✓ **Licensing program for operators on all equipment.**

***Leadership and command emphasis are needed for all five to work.***

**These points help to <u>train soldiers and grow leaders</u>.**

# CY02 TACOM Offsite Conference Data

- Total conferences attended - 414
- Total attendees - 2,080
- **$ 831,600 Travel cost**
- **$ 735,255 Registration fees**
- **$ 322,135 Per diem cost**
- **$ 90,097 Materials and supplies cost**
- **$1,979,087 Total direct conference cost**
- **$1,588,654 Lost productivity cost**
- $3,567,741 Total cost to attend conferences

# Principles for HMMWV Recap

- Develop SOW to optimize the system within available funding (# of systems X cost per system = available $).
- Organic Base Partnering
  - With Industry
  - With other Organic Base Entities, e.g. LEAD – RRAD
- Develop data requirements for next generation equipment.
- Leverage RDEC engineering directorates and industry to upgrade the fleet.
- Incorporate Unique Identification (UID) requirements in the strategy.
- Enterprise Excellence Tools used throughout the program (Operating System, Voice of Customer, LEAN, SIX Sigma).
  - Maintenance/Overhaul
  - Suppliers (DLA, Industry, AMC IMMCs)
- Program execution/assessment reviews quarterly.
  - Baseline program at start
  - Cost, schedule and quality are the key metrics
  - Reviews conducted and compared to baseline
- Future annual workload decision based on actual performance to date.
- Cost savings/avoidance shared with the customer – joint decision.
- Goal = competitive business environment over the life of the system.